

# HEIFER REPLACEMENT PROGRAM OVERVIEW

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KOSOVO CLUSTER AND BUSINESS SUPPORT

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# TABLE OF CONTENTS

BACKGROUND.....	1
PURPOSE .....	2
PROPOSED OPERATIONAL STRATEGY .....	2
PROPOSED MEANS OF IMPLEMENTATION.....	3
FINAL COMMENTS.....	5
APPENDIX.....	6
THE ROLE OF KCBS.....	7
HEIFER GROWER REQUIREMENTS.....	8
DAIRY FARM PARTICIPANT REQUIREMENTS .....	9

# HEIFER REPLACEMENT PROGRAM OVERVIEW

## KOSOVO CLUSTER AND BUSINESS SUPPORT

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### BACKGROUND

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This program was conceived during the period August of 2005 when five dairy related consultants were working in the field, including myself, and as a group identified that the inability to monitor performance in all sectors of dairy production was ultimately the root problem contributing to the current unsatisfactory condition of the Kosovo dairy industry. During this time, other problems were identified that are leading to the necessity of continuous importation of bred heifers into Kosovo as a means of maintaining milk production.

My role during this period was focus on reproduction and artificial insemination. The scope of my work was necessarily limited by time constraints as the allocated period of three weeks allowed only enough time to assess the most obvious problems that the dairy industry is facing regarding reproduction. The information, which I was able to gather concerning individual cows was incomplete and did not allow a comprehensive diagnosis. Record systems lacked the important data needed to monitor daily reproduction performance even in the best herds. There was no accurate benchmark from which to measure any success either by the dairyman or Kosovo Cluster and Business Support (KCBS).

I addressed several methods of improving the breeding program in my final report to KCBS regarding the August project so I will not duplicate them further.<sup>1</sup> However, as one looks forward, even if we get the breeding problems corrected, we do not have assurances that in the future there will be adequate replacement heifers available for the demand in Kosovo.

As we worked on farm after farm, we found that there is absolutely no understanding of proper calf raising methods. Facilities are non-existent and consequently the calves are being ignored. The problem actually begins before the calf is born and continues until many of the calves either die or are stunted with pneumonia or poor nutrition. In some herds the incidence of pneumonia approaches 100%. This fact coupled with the major management problems of the producing cows, is creating a huge deficit in the number of producing dairy animals for the future.

While researching the artificial insemination industry in Kosovo, I found no consistency or reason regarding selection of semen that is distributed and used by dairy farmers. Although most imported cows are quality Holsteins, 90% of the semen sold is Simmental. But even as we analyze just the small amount of Holstein semen, we find that the most critical characteristic, calving ease, is ignored. Thus cows are bred to bulls that produce large calves at birth and further complicate the total reproduction program.

After working on a cross section of twenty farms in Kosovo, it is my recommendation that three important characteristics would be appropriate in sire selection for the cows in Kosovo. First of course is **calving ease**, secondly would be **feet & leg composite**, and then **udder composite**.

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<sup>1</sup> See 2005 Dobler, Thomas E. *Kosovo Cluster and Business Support Project: Artificial Insemination Specialist Final Report, August 06 through August 28, 2005.*

Currently, a high percentage of births are requiring assistance, resulting in injury to the reproductive tract that delays rebreeding. Retained placenta occurs in over 70% of assisted births and this develops into metritis that in most cases is not treated properly resulting in non-fertile cows.

Another common problem on dairy farms is foot rot. Although a contributing factor is barn management, the feet and leg structure of many cows is inadequate for confinement barns, which are common in Kosovo. Therefore, it is important that we select bulls that will contribute to proper feet and legs on the future animals.

I would refer to a report that was given by two milk quality consultants during the project in August 2005 which stated that over 80% of cows in Kosovo are infected with mastitis. In addition to this astounding figure, my personal inspection of the Kosovo cows, found that most of the older cows have pendulous udders and are prone to mastitis under the management of confinement barns.

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### **PURPOSE**

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The main purpose of this program is to provide a means of successful reproduction resulting in healthy, genetically superior, and well-grown calves and heifers that will enter the productive milking herd at industry accepted ages of 23 to 26 months rather than the 30 to 36 month age which is common today. It is important to convert the heifer from an expense to an income item by calving six months earlier. This also helps multiply the herd population at an accelerated pace which will increase the net profit of Kosovo dairy farms.

Secondary goals that will contribute to the main purpose include a record keeping system that will enable KCBS to monitor the success of the program continuously. This same system will enable individual dairymen to understand the importance of all parameters used to monitor their individual herds. Through this knowledge, they will be able to manage the cows in a manner that will create sustainability to the dairy industry of Kosovo.

Genetically superior semen that is of sufficient quality to achieve acceptable conception rates will provide immediate results with increased conceptions and will also contribute to a healthy and high producing herd from within rather than continually relying on expensive imported replacement heifers. It is difficult to purchase imported cattle with superior genetics with current world milk economy. In addition to the lower genetics, imported cattle continually compromise the health of the Kosovo herd. Although they meet health regulations, they expose the current cows to the threat of disease. Considering the level of veterinary care in Kosovo, this is a huge issue and is draining money from the pockets of farmers every day.

This program will furnish the management techniques and knowledge needed to raise the calves from birth until entering the herds as milking heifer. Any attempt to introduce this program to all farmers in Kosovo will be a massive undertaking and will require years to accomplish and would require many consultant projects. However, through this program we can accomplish the goal in a relative short period of time and will leave a program with a high level of continuity that can then be replicated throughout the industry.

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### **PROPOSED OPERATIONAL STRATEGY**

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KCBS management or staff can determine the number of herds and cows involved in this program, with the only limiting factor initially will be the capacity of the heifer grower facility. I shall refer to this person simply as the "heifer grower" in the remainder of the proposal.

Currently, I believe that we need to enroll at least 300 cows in order to provide an adequate number of heifer calves to justify the program. Criteria used to select the cooperator herds would be as follows:

1. The herd must be predominately Holstein since only Holstein heifer calves will go through the Heifer Grower.
2. The herd must utilize artificial insemination and agree to use only KCBS approved semen.
3. Herd owner must agree to participate in computerized record system.
4. Herd must follow recommended health program including vaccinations.
5. Herd management must follow approved birthing process and newborn calf protocol.

The Heifer Grower will demonstrate to KCBS his ability to provide adequate feed and care for the number of calves that the program will encompass. He will also agree to cooperate with the consultant who will implement the program. It is critical to have this one on one relationship if the program is to succeed. In addition the following criteria need to be met:

1. Recommended facilities of proper design will be used throughout the growth pattern of the calves and heifers.
2. Provided rations will be fed at all times.
3. All heifers will be identified by an approved ear tag system.
4. Recommended vaccination programs will be followed.
5. All heifers will be bred to KCBS approved semen utilizing artificial insemination.
6. Participation in computer record system.
7. Will provide regular growth information utilizing heart girth tape measurements of all calves and heifers.

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#### **PROPOSED MEANS OF IMPLEMENTATION**

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*"We need to go to the ground floor, Dairy 101." Dr. Dan Undersander*

This program will require a new strategy from KCBS. Rather than utilizing consultants in specialized fields while attempting to put out fires in each, this program will require consultants with practical experience in livestock husbandry. I have included all of the different management aspects in this program, but it will be imperative that the consultant be involved at the very beginning of the program.

A step-by-step version of the proposed program is as follows:

1. With this program overview, I have provided a spreadsheet in MS Excel format that computes the projected cash flow for this project. Rations are incorporated into the cash flow projections. The rations are for calves from birth to heifers 7 months pregnant. Local prices and weights will be utilized and can be input in the spreadsheet as the market changes. **BASED UPON MY CALCULATION AND CURRENT VALUES, THE PROFIT TO THE HEIFER GROWER IS 463€ PER ANIMAL.**
2. Dairy Herd Improvement (DHI) of Provo Utah has tendered an offer for the computer record system pending legal approval. This offer is \$1995 for a system that would be able to provide individual herd analysis including the heifer grower, as well as a combined analysis of the entire program. A DHI marketing flyer regarding this program is being sent along with this program overview. It is my intent that the system would be installed at KCBS office and input data would be provided either by hard copy or e-mail from the participants on a regular basis. The frequency of input would be KCBS decision. I recommend bi-weekly but am open for discussion on this. This same program could be expanded at a later date to include milk weights, components and somatic cell counts. I will provide sample print outs and additional information as part of this program.
3. I continue to work with World Wide Sires concerning the semen but will not make selection of semen until the program is accepted. This is simply a means of getting the most reliable and valuable semen for the investment. WWS has assured me that they will cooperate in every way possible in order to make this program effective. It is my understanding that the semen would be stored and distributed by Fauna at no charge to the farmers. If we are talking three hundred cows, there will be a need for approximately 2300 units of semen over a three- year period. I have chosen three years as the life of the initial program for the simple reason that it will take this amount of time to get the resulting calves of the initial inseminations through the growing program and back into the milk- producing herds. Since the resulting calves from this program will actually be the foundation herd of Kosovo, I suggest using semen from some of the better bulls in America that will have the desired characteristic mentioned previously. Cost of semen will range from \$6 to \$17. The higher priced semen needs to be used in the better managed herds with imported cows. I would prefer to wait on final selection until the program is approved due to the fact that new bulls enter the market continually. Peter assured me that KCBS would underwrite this investment.
4. In my final discussion with Peter, he also expressed on behalf of KCBS, that the cost of the initial 50 fiberglass calf hutches to get the program up and running would be covered. This may seem like a huge investment, but when one considers that they can be utilized for many years to raise healthy calves in efficient manner, this becomes a bargain. I am still searching for availability in Europe and will provide final costs asap. I am assuming that it will be in the \$300 to \$400 range. There is no alternative if we are to raise calves without the plague of pneumonia that currently exists.
5. The powdered milk of sufficient quality is available through a distributor in Macedonia. There is a possibility that it can be purchased directly from the manufacturer but I have used the Macedonian prices in the spreadsheet.
6. A comprehensive vaccination program with the costs is attached. Costs are included in the spreadsheet I previously referenced. They are standard vaccines from Pfizer and should be available in Kosovo at start-up date. I am continuing to work with Pfizer representatives and will attempt to build a working relationship between Pfizer and

FAUNA. This vaccination program is very important because we are bringing calves from several herds together. Each herd has its “own bugs” and if we fail to prevent them from multiplying this entire program is jeopardized.

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#### FINAL COMMENTS

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During my discussion with Peter, even before he asked me to write this assignment, I expressed to him my concern of continuity of basic dairy management. If I was to write this, then I wanted to be involved in the implementation. This is especially important during the start-up phase. I bring 35 years of actual experience of raising calves and replacement heifers. In addition to raising the females on our 500-cow dairy, I was involved in an operation that purchased young heifers, fed and bred them and re-marketed them as springing heifers. I would even go a step further to recommend that both my wife and I are involved initially, since she fed all the baby calves on this farm for twenty five years and has the ability to pass that expertise to others very efficiently.

Additional consulting requirements will certainly include a nutritionist to formulate the dry cow and transition rations. With the current prevalence of mastitis, I recommend that this be addressed through a milk quality consultant who would work on the enrolled farms. I would envision that he would collect individual cow milk samples and isolate the specific bacteria, recommend drug therapy and continue to sample and monitor cows. This does relate to the reproduction and replacement needs.

As the program develops, the DHI system could begin to monitor milk quality on individual cows and would document it in a recorded form. This would not only increase the health of the herds, but would also increase the quality of finished dairy products. Increasing quality is a means of increasing value and thus leads to increased profits of the entire dairy industry.

*"To maximize the genetic improvement of dairy cattle in Kosovo, it is important farmers and all involved in the dairy industry understand the role of animal records and milk recording. When accurate and complete animal records are available, farmers will know the animals and genetics that are the top performers on their farm, and realize that high quality genetics do contribute to increased profits. Farmers should be able to see that their investment in genetics is paying dividends for them. Animal records and high quality genetics will go hand in hand in upgrading cattle breeds in Kosovo." Tony Evangelo, WW Sires*

# APPENDIX



# THE ROLE OF KCBS

The future of the dairy industry rests on the ability of the industry to improve the genetic base of the national herd and accelerate the reproduction and growth patterns. It is evident that most dairy farms do not have a basic understanding of the issues required to accomplish this goal. Therefore, KCBS will need to be the leader in educating the dairymen, the heifer grower, veterinarians, and semen and vet medicine suppliers. This program accomplishes all of this by including all aspects of management and organizing information so that results can consistently be monitored. The program relies on all aspects being instituted simultaneously. There are several main issues that must be followed to assure success.

1. Proper feed rations including rations for calves, heifers, dry cows, and transition cows.
2. Adequate computerized record keeping system that allows monitoring of the individual dairy farms, the heifer grower, and the success of the entire program. These records will provide an alarm if modifications to the program are justified.
3. Proper semen that meets the criteria mentioned elsewhere in this program.
4. Adequate vaccination programs to protect the health of the superior genetics that are forthcoming.

It is my understanding that KCBS will provide the required semen for this program. Details describing the quantity and quality of the semen are found elsewhere in the program.

Calf hutches would be purchased by KCBS for the initial segment of the program. You will note in the expense spreadsheet that depreciation is an expense item to the grower. I have charged this cost so that KCBS will fully recover the initial investment in the hutches in three years. At this point the hutches would become the property of the grower and would have many years of useful life remaining.

KCBS will provide ample consulting expertise to implement this program during the planning, start-up and during the initial three-year period.

KCBS will provide the DHI record system, which will remain in their ownership. Only KCBS staff will operate the system and staff will also provide pertinent reports to the participants in the program.

# HEIFER GROWER REQUIREMENTS

The heifer growing operation is the heart of this entire program. The success of the heifer-growing farm will depend on management paying attention to detail and establishing a consistent daily routine. As I envision this operation, it will be a two-man operation even when at full capacity. Attention has been given to the structure of this program to have as few people as possible working on this operation to eliminate inconsistency. The baby calves that will be received at the facility continually demand a stable routine of care and feeding. This segment of the entire program will also require the most intense training by qualified consultants. There are so many minute management issues that the grower must not only absorb from the consultant, but he must also understand the reason why those issues are important. There are several primary requirements that will need to be followed if this program is to succeed.

- Grower will be responsible for picking up the heifer calves three days after birth. It is important that the calves be moved from the dairy without experiencing a change in diet from colostrum to either whole milk or milk replacer. Fewer changes in the diet at this early age will contribute to increased health of the calves. Calves need to be transported in a draft free and clean environment.
- Grower will insert a second ear tag upon pick-up that will identify the farm of origin.
- Grower will administer vaccines identified elsewhere in the program.
- Weight and height will be monitored periodically and reported to KCBS
- All deaths will be reported to KCBS to be entered into the record system.
- Provided rations or approved substitutes will be fed.
- Grower will utilize individual calf hutches for all calves until at least 8 weeks of age. Thereafter, group pens of loose housing shall be utilized.
- Grower will breed heifers AI with KCBS approved semen.
- Grower will pregnancy check all heifers within 45 to 65 days post breeding.
- Grower will give the original owner of the animal first right of refusal at a price established at the beginning of this program. If the dairy farm refuses to exercise this right, the grower is free to market at his discretion. Marketing decision will be made when heifers are at least 5.5 months pregnant as diagnosed by a qualified veterinarian.

# DAIRY FARM PARTICIPANT REQUIREMENTS

This program has a very extensive design and therefore requires cooperation of all dairy farms enrolled, the calf and heifer grower, local veterinarians, semen suppliers and inseminators, and KCBS.

Any one segment of dairy management cannot be isolated, as it will have an effect on the total performance. There are numerous issues that the dairy farm will comply with in order to contribute to the success of this long term program. Although it will be necessary to have a consultant with an extensive practical background to initiate proper procedure, the following points will act as a guideline.

- All enrolled dairy farms will participate in the approved record system and will provide individual cow information required by the system.
- Dry cows must have a dry cow ration that will contribute to the proper development of the fetus and yet maintain correct body condition of the cow. This will help alleviate milk fever and other metabolic disorders at calving.
- A transition ration shall be fed from three weeks pre-calving until three days post calving.
- Dry cows will be housed in a loose-housing facility to allow proper exercise and continued muscle tone as an aid during calving.
- Cows will calve in a clean and sterile box stall as a means of disease prevention. This will also allow the cow to lick the calf, which stimulates the nursing process. These calving pens will be cleaned and sterilized between each birth.
- All calves will be fed colostrum with an esophagal feeder within one hour of birth using the dam's colostrum. It is important to do so in this time frame as the wall of the calf's stomach loses the ability to absorb the antibodies from the colostrums within hours of birth.
- The navel of the calf shall be dipped in a 7% iodine solution immediately at birth to prevent infection from entering through the navel.
- Calves will be removed from the cow and placed in a clean and healthy environment. This should be done as soon as the cow has licked the calf dry. These holding pens must be draft free and cleaned and sterilized between each calf.
- Colostrum feeding shall continue until the calf is moved to the grower facility at three days of age.
- Vaccination protocol of this program must be followed.
- Each calf will receive an ID ear tag approved by KCBS before leaving the dairy farm to enable enrollment in the comprehensive record system.